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ABSTRACT

Research on communication instruction for students with severe intellectual disabilities is reviewed, focusing on the pragmatic elements involved in accomplishing a successful communicative exchange. A federally funded project, called the "Conversation and Social Competence Research Project," is then described. The project sought to develop an effective conversation training program that would provide students with severe disabilities with the skills and adaptations they need to initiate communicative social interactions and maintain reciprocal turntaking. The project conducted four studies, which investigated: the relationship between conversation skills and inappropriate social interaction behaviors; interacting with peers through conversation turntaking with a communication book adaptation; generalized effects of conversation skill training; and using a communication book adaptation at home with informed family members. Results of these studies led to the development of a conversation training program for elementary to high-school age students. Program components include generation of topic menus to guide the content of each participant's conversation; development of individualized communication books (containing photographs and drawings of objects, places, actions, and people associated with the topic menu items) to serve as the conversation medium; and training on a specific "turntaking" structure. Appendices contain pages from conversation books, a Partner Training Script, a description of conversation training, and a conversation data sheet. (Includes 39 references) (JDD)

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Teaching Conversation Skills to Individuals with Severe Disabilities with a Communication Book Adaptation

Instructional Handbook

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Running head: CONVERSATION HANDBOOK

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Table of Contents

Page

Research: Teaching Conversation Skills to Individuals with Severe Disabilities 3

Introduction 3

- Existing Conversation Research 5

Teaching Conversation with a Communication Book Adaptation 7

- Experimental Analyses of Training Program Effectiveness 9

Future Research Directions 16

Application: Conversation Training Program 18

- Students for whom the Program was Designed..... 19
- Conversation Partners 20
- Conversation Books 21
- Conversation Turntaking 26
- Teaching Procedure 28
- Promoting Generalized Conversation 33

References 36

Appendices

A. Pages from conversation books

B. Partner Training Script

C. Instructional Program and Data Sheet

RESEARCH: Teaching Conversation Skills to Individuals with Severe Disabilities

Introduction

The focus of communication instruction for students with multiple severe disabilities has shifted dramatically in the past decade, from an earlier emphasis on teaching syntactic and semantic skills to a more recent emphasis on the pragmatic elements involved in accomplishing a successful communicative exchange (cf. Mirenda, 1990; Schuler & Goetz, 1981). As the integration of classes of individuals with severe disabilities into regular school sites becomes increasingly widespread, the need for instructional practices to establish the pragmatic skills required to be an effective communication partner has become evident. Observations of interactions between students with severe disabilities and their nondisabled peers in integrated settings suggest that students who lack the conversation-related skills that would allow them to initiate and maintain a social exchange with their school mates may be considerably restricted in the nature and scope of their interactions (cf. Piuma, 1983).

In addition, the establishment of the pragmatics of effective conversation may be associated with a decrease in the occurrence of inappropriate social interaction behaviors. As there is increasing evidence in support of the hypothesis that inappropriate nonverbal and verbal behaviors serve a variety of communicative functions, the suggestion is being made that intervention efforts to reduce aberrant behaviors should focus on providing the student with socially acceptable communicative means that are functionally equivalent to those behaviors (cf. Carr & Durand, 1985a; Donnellan, Mirenda, Mesaros, & Fassbender, 1984; Hunt, Alwell, & Goetz, 1988; Horner, Dunlap, Koegel, Carr,

Sailor, Anderson, Albin, & O'Neill, 1989). Several intervention efforts to reduce a variety of aberrant behaviors displayed by individuals with severe disabilities have reported an inverse relationship between the acquisition of a functional communicative response and the reduction of inappropriate behaviors (Carr & Durand, 1985b; Carr & Kologinsky, 1983; Casey, 1978; Horner & Budd, 1985). Based on these initial findings, it is reasonable to hypothesize that communicative responses that follow the pragmatic rules of conversation may be substituted for undesirable behaviors that serve to initiate and prolong social interaction (Hunt et al., 1988).

Despite the evident importance of teaching students with severe disabilities communication skills that would provide them with socially acceptable means for gaining the attention of others and maintaining a social exchange, conversation training has received little research attention. Although there have been reports of successful interventions to teach communicative behaviors that are components of a conversational exchange, such as initiating an interaction, commenting, requesting, asking questions, and terminating an interaction (Carr & Kologinsky, 1983; Gaylord-Ross, Haring, Breen, & Pitts-Conway, 1984; Hurtig, Ensrud, & Tomblin, 1982; Keilitz, Tucker, & Horner, 1973; Lancioni, 1982; Leifer & Lewis, 1984; Warren, Baxter, Anderson, Marshall, & Baer, 1981), few studies have provided students with the turntaking and chaining skills required for an extended exchange of messages (Gaylord-Ross et al., 1984; Goldstein & Wickstrom, 1986; Haring, Roger, Lee, Breen, & Gaylord-Ross, 1986; Hunt, Alwell, & Goetz, 1988). Thus, the development of strategies to teach conversational skills that students can use spontaneously in natural settings with a variety of communication partners should emerge as a major focus for research efforts.

Existing Conversation Research

The topic-comment, turntaking structure of a conversational exchange is a natural and socially appropriate means for maintaining social interaction. In terms of underlying communicative functions, conversation goes beyond the straightforward request/reject functions that have typically been the focus of instruction for learners with severe disabilities (cf. Reichle, Rogers, & Barrett, 1984). The underlying communicative function in a conversational exchange is social commenting. Rather than resulting in direct changes in one's immediate environment (as is the case with an effective request or rejection), the intrinsic consequences, or reinforcement, for participating in a conversation is social interaction and giving and receiving information. Thus, effective teaching strategies for conversational skills, and instructional outcomes (in terms of teaching generalized communicative behaviors), might be expected to differ from those associated with teaching other communicative functions and content.

Few instances of teaching conversation are available. Gaylord-Ross et al. (1984) promoted social turntaking between three students with autism and severe or moderate cognitive delay and nondisabled peers. Leisure activities (such as playing Pac Man or listening to a portable radio) were the focus of the exchange and the primary medium for reciprocal interaction. The students with disabilities were taught to initiate social turntaking by greeting a potential partner and offering to share the leisure activity with him or her. If the offer was accepted, the exchange was extended as the two used the leisure object in a give-and-take manner. Gaylord-Ross et al. discussed the role the leisure object, as well as the social skills training, may have played in facilitating social interaction.

Scripted speech and modeled phrases are vehicles that have been used to support conversational turntaking between students with severe disabilities and their partners. Garcia (1974) presented pictures as the stimuli for short conversational exchanges between one of two students with severe intellectual disabilities and an adult partner. The students were taught three separate phrases related to the picture that were either questions to cue their partner's response or answers to their partner's questions. The question-answer form of the exchange produced the turntaking and chaining needed for conversation. Haring et al. (1986) used a modeling procedure and the stimuli generated from actual conversation with nondisabled peers to teach conversation skills to three students with moderate intellectual disability. The participants were taught to initiate a conversation by introducing an appropriate topic and then to extend the exchange by responding to comments made by their partners and expanding on current topics to promote further turntaking.

The potentially significant role of partners as facilitators in a social interaction with severely disabled individuals has been discussed (Beukelman & Mirenda, 1987; McNaughton & Light, 1989; Romski & Sevcik, 1988); however, few experimental studies have investigated the effectiveness of partner cueing and prompting procedures to promote communicative exchanges or training strategies to teach these support skills.

In reviewing the few studies that document successful, if somewhat limited, conversation training outcomes, some strategies that contributed to that success emerge, including the use of items or pictures to serve as a stimulus or medium for reciprocal interaction and scripts or turntaking formats to support an extended exchange. Further analysis of these support strategies is needed, as well as the identification of partner, contextual, and instructional variables that

can be manipulated to promote natural, highly social conversational exchanges between individuals with severe disabilities and their friends and family.

Teaching Conversation with a Conversation Book Adaptation

The purpose of the three-year, federally-funded **Conversation and Social Competence Research Project** (G000730083) was to develop an effective conversation training program that would provide students with severe disabilities with the skills and adaptations they needed to initiate communicative social interactions and maintain reciprocal turntaking. Additionally, studies were designed to demonstrate an inverse relationship between increased conversation skills and reduction in inappropriate social interaction behaviors.

The students who participated in the studies were of elementary or high school age. They were enrolled in classes for individuals with severe disabilities located on regular public school campuses; however, a large portion of their school day was spent in integrated school and community settings including regular education classrooms, the school cafeteria and playground, stores, restaurants, homes (for domestic skills training), recreation facilities, and job sites (for the high school students).

All the students identified for the conversation training program utilized a variety of verbal and nonverbal, socially acceptable and socially inappropriate behaviors to initiate an interaction with peers and to maintain the social exchange over time; in fact, the presence of high rates of behaviors that functioned to establish social interaction was the major selection criterion.

Each of the participants shared a common speech/language profile: they had some speech but did not articulate clearly so their speech was often misunderstood; language functioning was restricted to simple sentences

(minimal use of modifiers and complex structures); and, although the students frequently initiated verbal exchanges (i.e., with simple greetings, comments, and questions), they did not maintain such interactions beyond two to three turns.

Conversation training sessions occurred no more than two times per day and lasted from 4 to 5 minutes. Restricting the length and frequency of instruction was done in an attempt to maintain the "social quality" of the interaction between the students and their nondisabled participants. Instruction occurred in a variety of classroom, school (e.g., the cafeteria and playground), and community (e.g., restaurants and job sites) settings.

A complete description of the conversation training program is provided in Part II (Application) of the training manual. A brief review of the major components of the program--the generation of "topic menus," the communication book adaptation, and the specific "turntaking" structure taught to the students--is provided below.

Topic menus: The content of conversation. The participants and their teachers and care providers were asked to name the students' favorite things, people, and activities at home, school, and in the community. These lists served as conversational "topic menus" providing suggestions for the selection of pictures for the communication books that served as the medium for conversation.

Communication books: The medium for conversation. Communication books were developed for each of the students that included colored photographs and black and white line drawings of objects, places, actions, and people associated with each of the topic areas on the student's menu. The photographs were housed in a 5" by 7" photograph album. The conversation

books were carried by the students throughout the school day in sports pouches attached to shoulder straps or the waistbands of their pants. The book was organized conceptually by environment: that is, there were pictures of favorite items, people, places, and activities in the child's home, school, and community. Occasionally, pictures were grouped together by special event (e.g., Christmas or birthday parties). Photos were frequently exchanged with new pictures to keep students and their partners interested in the topics represented in the pictures.

The communication books served as the conversation medium. The students were taught to pair spoken words and phrases with a point to the relevant picture in the book. This strategy ensured that their questions, comments, and answers would be understood by their communication partner. Pictures and line drawings also provided cues for comments and appropriate answers to questions.

Conversation turntaking: The structure of the conversation. Both the students with disabilities and their nondisabled peer partners were taught a specific "turntaking" structure that supported a balanced, sustained interaction. Each conversation "turn" included both responding to their partner's message and then cueing that person to respond again.

Conversation turntaking is described in detail in Part II (Application), page 26.

Experimental Analyses of Training Program Effectiveness

Four experimental studies were completed during this project period that began to answer questions related to program effectiveness. "Effectiveness" was measured in terms of the acquisition of targeted conversation turntaking skills, generalization of those skills to noninstructional contexts and partners

(including the students' homes and families), and the degree of impact on related inappropriate social interaction behaviors.

Study 1: Acquisition of conversation skills and the reduction of inappropriate social interaction behaviors (Hunt, Alwell, & Goetz, 1988). The purposes of the first study were two-fold: (a) to determine the extent to which the conversation training program provided three high school students with severe disabilities with the skills they needed to initiate and maintain an ongoing conversation with nondisabled peers across a variety of natural contexts; and (2) to further test the hypothesis that inappropriate behaviors would be reduced as they are replaced by socially acceptable, functionally equivalent communicative responses. The undesirable behaviors targeted for intervention in Study 1 were those the students used to maintain and prolong social interaction; therefore, the alternative communicative behaviors also would have to serve to promote a social exchange. Specific communicative responses that followed the pragmatic rules of conversation could serve that purpose.

The students who participated in Study 1 exhibited a number of excess behaviors that hampered their daily interactions with high school peers and staff. Following the model proposed by Donnellan et al. (1984), a systematic analysis of the consequence patterns related to the display of excess behaviors was completed in order to identify a subset of behaviors that appeared to be maintained by social interaction outcomes.

Once targeted inappropriate social interaction behaviors were identified, conversation training was begun. Instruction was delivered in a variety of campus and community settings: for example, during lunch or break periods at

community job sites, en route to a local store or job site, in the classroom during informal opening activities, or in the high school cafeteria or on the bleachers during lunch period. Five nondisabled high school students and one university practicum student participated in the study as conversation partners.

At the completion of the study, each of the three students was initiating a conversation independently and participating in conversation turntaking throughout a 10-minute session. In addition, the students were rarely displaying the targeted inappropriate social interaction behaviors during instructional sessions. Although these results were encouraging, further analysis was needed of the extent to which these outcomes would generalize to noninstructional contexts and partners. Difficulties that individuals with severe disabilities have in utilizing augmentative and alternative communication systems outside instructional settings is well documented (cf. Calculator, 1988).

Study 2: Interacting with peers through conversation turntaking with a communication book adaptation (Hunt, Alwell, & Goetz, in press). The purposes of the second study were to replicate the Hunt et al. conversation training procedures with three elementary-age students with severe disabilities and to measure spontaneous initiation and conversation turntaking in a variety of nonexperimental contexts.

The students were provided with a conversation book which they carried with them throughout the school day. (See Part II, Application, for a detailed description of the development of conversation books and a discussion of "carrying cases.") Instruction was provided on an average of two times per day for four minutes. In order to promote generalization to noninstructional contexts, an attempt was made to "train across sufficient exemplars" (Stokes & Baer,

1977); that is, training sessions involved at least 12 nondisabled peers as partners for each of the students and was implemented in at least four different settings. Generalization probes were conducted across 15 different nondisabled partners in four novel settings.

Performance in generalization probe contexts differed somewhat from expected outcomes. The hypothesis of the study predicted that there would be a gradual increase in generalized "turntaking" as students were given less and less assistance in training contexts; furthermore, it was predicted that the number of "turns" taken during generalization sessions would equal the number of "turns" taken in training contexts during the independence phase when instructional assistance had been withdrawn. The data, however, revealed that for two of the three participants, the number of "turns" taken in generalization contexts remained significantly less than the number of "turns" taken in instructional contexts throughout the conversation training phase; in addition, for all three students the number of "turns" taken during generalization sessions continued to differ significantly from performance in training contexts for the first three sessions of the independence phase, when only independent performance was measured in all settings.

Informal observation led to the speculation that the source of breakdown in conversational "turntaking" was related, at least in part, to communication partner variables. [The significant impact that communication partners have on the success or failure of communicative interactions with individuals using an augmentative or alternative communication system has been well documented (Calculator & Dollaghan, 1982; Calculator & Luchko, 1983; Harris, 1982; Light, 1988; Light, Collier & Parnes, 1985A; Light, Collier, & Parnes, 1985B)]. It was speculated that conversation breakdowns were occurring during generalization

probes because peer partners were not using pictures in the conversation book as topic sources or participating in a "turntaking" structure that supported balanced interactions. Following a brief training session in which peer partners were taught to use the communication book as the medium for conversation and specific cueing and "waiting" strategies to facilitate "turntaking", there was a significant increase in the number of conversation "turns" taken in generalization settings. [See Part II (Application), page 31, for a complete description of the information given to conversation partners.]

The outcomes of this study provided suggestions for the development of a conversation training program that would produce generalized conversation skills within a context that includes conversation books and informed partners. Peer training appeared to be a necessary addition to the original components of the training package.

Study 3: Generalized effects of conversation skill training (Hunt, Alwell, Goetz, & Sailor, 1990). The purpose of Study 3 was to extend to generalization settings the analysis of the relationship between conversational abilities and the frequency of the display of inappropriate social interaction behaviors. The study was designed not only to further document generalization of newly acquired conversation skills to "conversation opportunities" with partners who had not participated in instructional sessions, but also to measure the extent to which increases in conversation skills and component behaviors (greeting and commenting) were accompanied by a reduction of targeted inappropriate social interaction behaviors.

As in Study 1 procedures were implemented to determine the communicative functions served by the excess behaviors displayed by three

high school students. A set of behaviors was identified that were potentially pro-social in function. As the students learned to initiate and maintain a conversation throughout four-minute training sessions with their communication book adaptation, measures were taken of the generalization of those skills to two types of settings: 1) four-minute "conversation opportunities" with a nondisabled peer, and 2) 15-minute periods in the classroom that can be described as transition or "down" times and included several special education and regular education students.

The results of the study showed not only generalization of conversation skills to "conversation opportunities" (replicating Study 2 outcomes) but also transfer of conversation skills and component behaviors (greeting and commenting) to the 15-minute unstructured periods. Additionally, increases in communicative behaviors in the 15-minute probe contexts were accompanied by generalized decreases in the targeted excess behaviors.

Studies 1-3 demonstrated that students with very limited speech and language abilities could participate in conversations with friends at school and in the community with support from a communication book and informed partners; additionally, the studies provide some evidence that increased communicative competence would be accompanied by a more general increase in social competence. However, an estimation of the social validity, or degree of impact on the child's quality of life, was not complete until an analysis was made of the degree to which newly acquired conversation skills "went home" with the students. Study 4, Using a communication book adaptation at home: Informed family members as conversation partners (Hunt, Alwell, & Goetz, 1990b), was designed to identify procedures that would promote

generalization of conversational abilities to the students' homes and family members.

Three high school students were taught to participate in conversations with a number of peers in a variety of school and community contexts. During the training phase of the study in which they were receiving an average of two 5-minute sessions per day, Student 1's mom and Student 3's respite worker were spending 5 minutes each afternoon or evening at home "talking" to the students (i.e., providing a "conversation opportunity"). The conversation book was available for either partner to use. However, no information was given to the mom or respite worker on how to support conversational turntaking using the conversation book as the medium for the exchange or the "cueing" and "waiting" strategies provided by the conversation structure (see Study 2). For Student 2, five regular education students who had not participated in instructional sessions served as partners in daily "conversation opportunities" at school and in the community.

Throughout the "training period" at school, few complete conversation turns were taken Student 1 and 3 with partners at home or by Student 2 with naive schoolmates even though the conversation book was available to support a turntaking exchange. Informal observation revealed that most often the adult would dominate the exchange by asking a succession of questions of the student (e.g., "How was school?" "What did you do?"). Occasionally the student would dominate by using the pictures in the communication book to make a series of descriptive comments (e.g., "This is my friend." "I worked at Fudduckers.")

At the end of the training phase when all three students were participating in balanced, sustained conversations with a large number of peers

at school, there continued to be breakdowns in conversational turntaking at home and with naive schoolmates. This outcome had been predicted. The study had been designed to demonstrate with experimental controls that successful conversation would occur at home or school immediately following a brief training provided to friends or family members and other care providers. Utilizing a multiple-baseline design across the three students (Kazdin, 1982), partners at home and school received the information they needed to support the student by conversing via the communication book and utilizing the conversation structure to provide additional prompts.

The results showed that the number of balanced conversational turns taken following partner training immediately matched performance with informed peers at school. Finally, the study demonstrated that one family member could teach another without further input from school personnel. Student 1's mom taught her dad and Student 3's respite worker taught her mom to participate with their children in balanced, highly social conversational interactions.

Future Research Directions

While the results of the Hunt et al. investigations are promising, they represent only the initial step in the investigation of the effectiveness of the conversation training program in promoting successful conversational interactions between individuals with severe disabilities and their friends and family. There is a need to identify strategies to develop "linguistic communities" of nondisabled classmates, acquaintances in community settings, and coworkers to support conversational interactions by individuals who rely on a communication book adaptation. The relationship between conversational competence and more general social competence and social integration should

be investigated. An attempt should be made to document changes in the attitude of nondisabled partners as they develop a relationship through conversation with individuals with disabilities. Finally, the maintenance of conversation turntaking skills over time should be monitored to determine why, when, and where breakdowns occur. Procedures to support generalization and maintenance of conversation skills must be developed to ensure that the ability to participate in quality social interactions is not restricted or lost.

APPLICATION:
Conversation Training Program

Students for whom the Program was Designed

The conversation training program was developed for individuals with severe intellectual disabilities who needed the support provided by the conversation book and the turntaking "structure" to participate in extended conversational exchanges with friends and family. The elementary to high school-age students who participated in the experimental studies, through which we developed and evaluated the training program (see p. 7), shared the following speech/language profile:

a) the students had some speech but did not articulate clearly so their speech was often misunderstood;

b) language functioning was restricted to simple sentences (minimal use of modifiers and complex structure) and may have included repetitive phrases (e.g., "who's your teacher?" repeated several times after the question had been answered); and

c) participants initiated verbal exchanges (simple greetings, comments, or questions) but did not maintain such interactions beyond two to three turns.

A number of the students engaged in a variety of inappropriate behaviors that appeared to serve a very specific communicative function: initiating and maintaining social interaction. Paula would giggle excessively and hide her face; Peter grabbed and patted; Mary talked to imaginary others and imitated animals. Matt would squeal, shout, cheer, hit, kick, name-call, and take another's possessions; Katie would hit, "boss," and lie on the floor or ground; Ty

chased peers and stared in windows of regular education classrooms. However, conversation provided Paula, Peter, Mary, Matt, Katie, and Ty with an alternative, socially accepted means for gaining the attention of others and maintaining a social exchange. Two studies clearly documented a relationship between increases in the conversation skills of these students and decreases in inappropriate social interaction behaviors.

Conversation Partners

Persons who served as conversation partners in the studies have been regular education students (nondisabled peers), coworkers at job sites, family members, family friends, care providers (such as respite workers) or familiar persons in the general community (such as the regular clerk at the corner store).

Regular education students have included nondisabled peers participating in "buddy" and/or peer tutor programs, and peers in classes and nonclassroom situations where our students have been included in mainstreamed activities. Peer tutors and buddies have been recruited primarily through "ability awareness" (e.g., Murray & Beckstead, 1983) inservices to regular education classes and special clubs (such as the Honors Club at a high school). Counselors have also been alerted to the need for regular education participation and have provided this information to their students. Additionally, many students who have spent some time as peer tutors themselves have recruited their friends. At the elementary school level, structured interaction activities were provided through buddy programs where students shared fun events, such as cooking, art, table and outdoor games; and conversation was integrated at natural opportunities during ongoing social interactions. At the secondary level, students have participated for semester or quarter credits as teaching assistants in the special education program or through an

independent study arrangement. Some of these students have accompanied one or two of our students to their mainstreamed classes. Others traveled with our students into the community to jobs, restaurants, domestic sites, or stores.

Peers who have not been part of a formal program have interacted with our students at lunch or recess, or shared physical education, art, library, homeroom or other classes with them. Coworkers and other persons in the community have been approached after initial rapport has been established. When persons are already familiar with our students and have attempted to interact socially, it is easy and natural to facilitate a conversational exchange. Our goal is to create a linguistic community of individuals at school and in the community who are familiar with our students and their communication systems, and can support them in their attempts to interact.

Family members, friends, and other care providers have been approached both during training and after students have already made progress toward independent conversation exchanges with nondisabled peers at school. This group of individuals have been very receptive because they are aware that the ability to participate in successful conversational exchanges with family members or friends with severe disabilities would enhance ongoing relationships.

Conversation Books

The students who participated in the conversation training program had been unable to sustain communicative exchanges with friends because of poor articulation, limited vocabularies, and restricted abilities to initiate topics for discussion. The conversation books helped to remove those obstacles. They are simply small albums or notebooks filled with colored photographs. The photos provide numerous ideas for things to talk about and are readily

accessed by the student with a simple point to a picture and a word or phrase. Additionally, articulation difficulties are overcome as the pictures provide a visual referent which helps to clarify the student's speech. Appendix A provides examples of pages from conversation books.

The first step in designing a conversation book for a particular student is to assess his skills directly related to successfully using a book for conversation.

Assessment

Preliminary assessment information should be gathered in the following areas:

- the student's ability to identify persons and actions depicted in pictures;
- the student's scanning abilities to determine the optimum number of pictures on a page;
- the student's recognition of items depicted in line drawings (if any are to be used);
- if a student can read, evaluation of possible labels for the pictures including 1) the optimum size of the lettering and 2) the complexity of the phrases; and
- if the student experiences any visual impairment, evaluation of 1) the optimum size and complexity (or "busyness") of the pictures.

Content

Pictures in a student's conversation book represent his or her favorite activities, people, and things at home, at school, and in the community. These may include magazine pictures, illustrations, colored and/or black-and-white photographs, and line drawings. As a general rule, we have found colored photographs to be the most appealing to students and partners. The student

and his or her parents, teachers, friends, and peers should all be asked for their ideas on what to include. Family members especially should be asked to send in pictures of themselves, friends, relatives, their home, pets, and any special events important to the student, such as vacations, holidays, and birthdays. Pictures selected for inclusion are labeled for the partner's benefit. If the student can read, the text chosen should match his skill level (see Assessment section).

Layout/Organization

The pictures may be organized in any manner that is meaningful to the student and that he or she prefers. It is helpful to group pictures in some fashion, perhaps by topic and environment. A school section might include pictures of classmates, daily activities at school, teachers, friends (it's fun to include some pictures of peers who will be conversation partners), and jobs. A community section might include restaurants, stores, and recreation sites that the student uses. There might also be a cooking/foods section. A sports or recreation section might contain newspaper or magazine pictures of sports heroes and game receipts from events the student has attended. A special events section can be filled with pictures of holidays, birthdays, and field trips. Finally, a home section should be included as discussed earlier. It is recommended that a couple of pages be left blank for current "remnants" (Mirenda, personal communication, 1988): that is, items brought in regularly by the student that depict something she has just done, is planning, or in which she has an interest. Examples include a ticket stub from a movie, a flyer from a concert, a badge earned in an after-school club, or a newspaper clipping of a recent earthquake. One of our younger students brought in a couple pieces of dry cat food taped to her remnant page and talked in an animated tone to her

friends about taking care of her cat at home. Another student taped a copy of an airline ticket to his remnant page that he had used on his first solo plane trip to visit friends. A third student added a picture of a rock band that he was going to see in concert. Discussion cued by remnant page items is often enthusiastic as students remember a recent event or look forward to an upcoming one.

Sections may be marked with index tabs (these may be taped right on the pages) with some symbol on them understood by the student and/or the partners to enable them to quickly find a particular section of the book.

The book should look "age-appropriate." Younger students may want to decorate their books with stickers. Older students may enjoy typing their labels on the computer with a peer. Printed labels give their book a more formal appearance.

The layout of the content will be determined by the actual size of the book. For preschool and students in lower primary grades, we recommend small books, approximately 3 1/2" x 5"; for older students, 5" x 7" books work well. Books larger than this are too cumbersome to be carried for long periods. (For suggestions of book materials, see the next section, Books and their Covers.)

Another format designed specifically for phone conversations (Meisel, 1990) was an 8 1/2" x 11" sheet of paper with a variety of different sized photos taped onto it in a collage fashion. Xerox copies were sent to the persons the student liked to call, and a copy was kept by his phone so that both parties had the same visual referent. This worked well. Similar conversation "sheets" might be developed for a child who uses a lap tray on her wheelchair or a free-standing augmentative communication device.

Books and their Covers

We have used small photo albums, scrapbooks (both found at drug, dime, or book stores), or small loose leaf notebooks with heavy-gauge vinyl page protectors. The latter may be available through art supply stores under the guise of small portfolios or through companies actually selling augmentative communication devices. They are great for students who might damage a more fragile book.

When designing the covers for the communication books "age-appropriateness" is again an issue. Students may want to decorate the covers themselves or type titles on the computer and tape them on; in any case, be sure that guidance is provided so that the end result is something that anyone the student's age would enjoy using. Include some identifying information (e.g., the student's name, teacher's name, school address and phone number) somewhere in the book so that if lost, it has some chance of being returned.

Carrying Cases

A carrying case ensures that the conversation book will be with the student at all times, so that she may take advantage of naturally occurring conversation opportunities. It will also serve as a cue to use the book for conversations. Anything that looks good, holds the book, can be easily manipulated (if this is an issue for the student), and that the student will carry (or learn to) and prefers may be used. This includes purses, waistpacks, small camera bags, travel pouches designed to hold passports, and pockets. Campus bookstores and camping stores, such as REI, EMS, Eddie Bauer, or the North Face generally carry suitable packs. Again, the selected pack should be small enough so that the student is comfortable carrying it or wearing it throughout the day (this excludes regular-size backpacks or book bags). A few

models have Velcro closures; most zip shut. Both work. The model with Velcro may be easier for students to use. Additionally, students may choose a style to fasten onto their belt, wear around their waist in a pack, or carry on their hip with a shoulder strap. Many colors are also available.

Changing Content: Keeping Conversations Fresh

In order to keep the content of conversations "fresh" and varied, the pictures which represent conversational topics must be exchanged frequently. But this need not be as tedious or as costly (in the case of colored photographs) as it may seem. Even changing a few pictures each week helps keep students' interest high. Also, remember that students are taught to draw many topics from each picture. (See Teaching Procedure section for elaboration on this.)

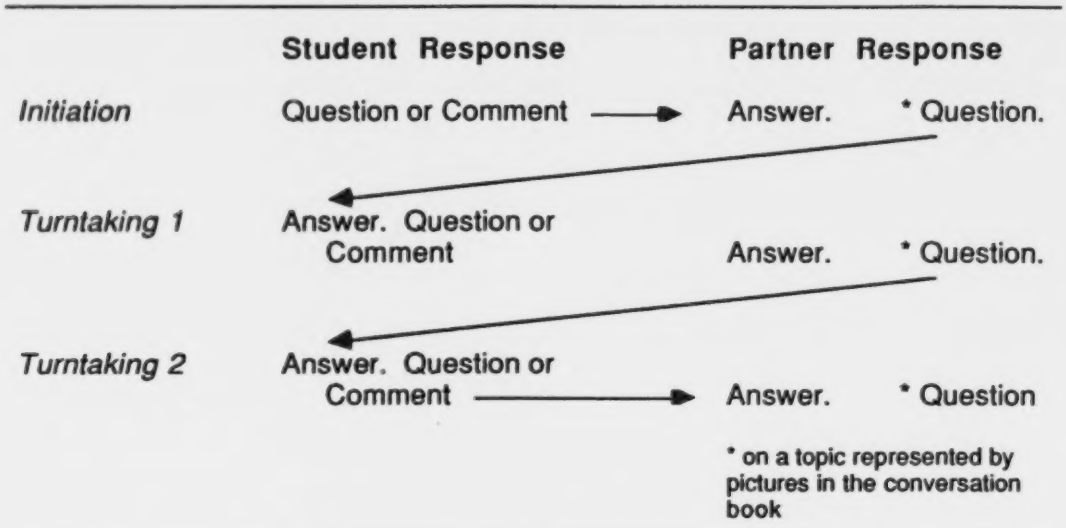
Students and their friends may be involved in the process of collecting items for inclusion, as well as the actual process of labeling them and putting them in the book. This might be a stimulating small group activity. Partners may also be encouraged to compile books of their own. Some of our regular education partners surprised our students with their own books which gave them the opportunity to share their personal lives as well.

As students master the basic give and take rules of conversational exchanges, they may be able to use other materials in addition to their books for topic ideas and to clarify their speech such as magazines, other photo albums, pictures, or school yearbooks. In fact, these are ideal tools to facilitate generalization of skills first learned with their conversation books.

Conversation Turntaking: The Structure of the Conversation

A specific turntaking structure is taught to the student and his or her partner to support a balanced, sustained conversational exchange. The

structure was developed to facilitate the turntaking process, not to dictate content. It requires the student and partner to structure turntaking so that they first respond to the other's message and then cue that person to respond again. The specific structure taught is pictured below.



Within this structure our students initiate conversation by removing their books from the carrying cases and making a comment or asking a question. The partner then responds to the comment or question and makes any additional comments that he desires. He finishes his turn by asking our student a question that can be answered by referring to pictures in the conversation book. Our student answers his partner's question and then makes an additional comment(s) (on the same or a different topic). The comment then serves as a cue for the partner to respond again.

This turntaking structure facilitates conversation by providing to both partners in the exchange a "within activity prompt" to take another turn: that is, the questions asked by the nondisabled peer partner appear to provide a highly salient cue for the student with disabilities to take another conversational turn.

In addition, the peer partners are reminded to "wait" until the student not only answers their question, but also makes a new comment on the same or a different topic. The additional comment made by the student with disabilities then serves as a cue for the nondisabled partner to respond with a related comment(s) and then the "prompting question."

The seemingly artificial structure required by this model in fact can support a fluid and dynamic exchange. Within the framework provided by the supporting structure, partners may include multiple utterances and functions that typify conversational exchanges (see the next section, Teaching Procedure.)

Teaching Procedure

Conversation may be taught any time (and in any setting) during the day that conversations naturally occur. At the elementary school level, settings and times we have used have included the cafeteria or lunch yard just after eating, free time in mainstreamed classes, "buddy" activities (for example, while students are waiting for a cooking project to finish baking or an art project to dry) and transition or "downtimes." (Note: recess does not seem to promote conversational interactions as students tend to prefer running and playing to sitting and talking). At the high school level, natural conversational opportunities occur during breaks at job sites in the community, during lunch or snack breaks in restaurants or on school grounds, while relaxing after doing chores at a domestic site, during transitions between activities, or even when buying a soda at the corner store there may be time for a short exchange with a familiar clerk.

Training sessions should be brief. For preschoolers, it is more appropriate to count turns rather than minutes, and 1 to 3 turns is a typical

conversational exchange for this age group. For students in grades 1 to 3, sessions of three minutes are sufficient. For 4th to 12th graders, four to five minute sessions are of adequate length to teach students to engage in sustained conversation turn-taking. Training sessions should not be implemented more than twice per day. Additional training sessions are difficult to arrange. More importantly, training is intense and artificial; students may become bored before independent performance is achieved and natural social exchanges with the book can occur.

Once students have met initial instructional criteria and are independently taking a number of conversation turns with different partners, **maintenance sessions** should be arranged approximately twice per week. These will afford an opportunity to introduce new pictures and topics, ensure that skills are being maintained, and inform new partners (see Partner Information, p. 31).

Finally, arrange also for **generalization of learned skills** to new partners, settings, times, and/or with materials not used for instruction (see Generalized Conversation, p. 33). This does not involve "sessions" as with initial training and maintenance; rather, numerous opportunities for natural conversational exchanges of various lengths are provided. The criterion for success of the conversation training program is that students will initiate and maintain conversational exchanges throughout the day whenever they desire the social interaction that conversation provides.

Instructional Strategy

To teach initial conversation skills, we have used a typical prompt-fade instructional strategy since this is appropriate for the acquisition of new skills and allows the student to be successful from the beginning. A baseline

measure is taken to determine the student's skill level prior to instruction and the level of assistance needed for the student to participate in conversation turn-taking utilizing the conversation book. A comment has been defined as a point to a picture in the book (which may or may not be accompanied by spoken words); therefore, instruction focuses primarily on teaching students to point to various pictures, both to answer questions and to make new comments. Some individualized combination of physical, gestural, and verbal prompts is selected and implemented, with the amount of assistance gradually decreased across instructional sessions until the student is initiating and taking conversation turns independently. Fading prompts is also individualized; for example, if a student requires all three types of prompting initially, the fading steps include gesture and direct verbal prompts, followed by verbal prompting alone.

Instructional strategies to teach word/phrase accompaniment when appropriate include direct verbal and indirect verbal prompts. Direct verbal prompts (e.g., "Say, I'm going out for lunch.") may be faded to indirect verbal prompts (e.g., "What could you say about that?") as the student nears independence pointing to pictures and utilizing the "conversation structure." If the student performs successfully at the current prompt level to initiate a conversation or take a conversational turn, he is reinforced by the instructor with subtle verbal praise or a pat as appropriate. If the student does not respond correctly, he is given increasing levels of assistance until he is successful, and reinforcement is withheld.

The instructor should be positioned to one side of the partner dyad next to the student receiving training so that the student and her partner focus on one another rather than the instructor. Assistance should be provided as discretely as possible. Prompts may even be whispered. Reinforcement for correct

responses should also not interrupt the flow of the conversation and should become intermittent as the natural reinforcement inherent in successful conversation turn-taking and attention from the partner gains in strength.

Instructional Programs

An individualized instructional program may be written which briefly outlines the components necessary to teach conversational skills to a particular student. It should include the instructional objective for the student and a brief description of the settings in which training will occur. Specific teaching procedures may be described including the prompt sequence selected for pointing to pictures and accompanying words/phrases, the correction procedure for incorrect responses, the reinforcement procedure, and a description of how to record student performance. (A data sheet and graph may be attached to the instructional program.) Student and partner responses should also be specified, so that staff unfamiliar with the conversation training structure may follow it. The best instructional program contains all necessary information to run a training session, but is also concise enough to be useful (for an example, see Appendix C).

Partner Information

We have found that most partners need some specific information to act as conversation partners for our students. This can be relayed in five minutes or less and should include at least the following points:

- make comments by referring to pictures in the communication book;
- cue the student with disabilities to take another turn by asking them a question related to a picture in the book;
- wait after the student answers the question to give him the opportunity to make additional comments or introduce a new topic.

(See Appendix B for an example of the script which provides essential information to nondisabled partners.)

It may be helpful to role play a conversation with partners utilizing the book if they seem hesitant. They may also be assisted with prompts during actual instructional sessions if they get stuck; for example, say, "It's your turn to ask a question" or "Ask her something about that" (indicate picture). Be sure to provide reinforcement for them as well, for example, "You are a great partner" or "Jamie really enjoys talking with you." Some partners will need more assistance than others.

Partners also need to know that they may elaborate when it is their turn as much as they like; however, it is important to adhere to the general turntaking "structure" (see Conversation Structure, p. 26), so that the prompts this provides to the student are available to him. As time goes on, allow students and partners to digress a bit. Chances are that they are beginning to really relate to one another. Stay out of the way! Be as cool and subtly directive as possible. Students are most likely to be motivated to discuss topics of their choosing. In fact, as soon as they are able, encourage the students and partners to make choices with regard to the topic, picture, and/or page selected for discussion through indirect verbal prompts, such as, "Where should we begin?" or "What do you want to say about that?"

During the period of conversation training, students may want to use their books at times other than during planned instructional sessions. Let them. Taking even a couple of conversation turns with friends reinforces their skills and promotes generalization to noninstructional settings and partners. Students may also be encouraged to use their books to make requests and

comments or to clarify these in other contexts. This would increase the overall communicative value of their conversation book.

Promoting Generalized Conversation

The goal of the conversation training program is to provide individuals with limited speech and language skills with the tools they need to engage friends and family in lengthy, highly social conversations. Instructional sessions are provided to teach conversational turntaking--maintenance sessions ensure that skills are not lost over time; however, it is the "conversational opportunities" provided throughout the day and the availability of "informed" partners that allow the individual to initiate and participate in naturally occurring conversations and experience the type of social interactions that conversation provides. Throughout the course of the design and implementation of the experimental studies described on pages 7-16, we were able to identify a number of strategies that appeared to significantly effect successful generalization. Those strategies are described below.

1. Teach across multiple exemplars. Conversation training sessions should occur in a variety of natural settings at school and in the community and involve a number of nondisabled partners in order to facilitate the transfer of conversation initiation and turntaking skills from instructional sessions to naturally occurring "conversation opportunities."

2. Ensure that the conversation books are available. Encourage and remind the students to carry their books with them across the day at school, in the community, at vocational sites, and at home (or at least keep them in a

"special place") so they always have the support provided by the book available to them during a social exchange.

3. Provide information to potential partners. Create "linguistic communities" of individuals at school, in the community, and at home who are able to support the students as they attempt to interact socially through conversation with their communication book adaptation (see Partner Information, p. 31).

4. Provide "conversational opportunities." Establish situations throughout the day when nondisabled peers are available for conversation and there are no other ongoing activities that disrupt or distract (e.g., after lunch, during breaks at job sites, while relaxing after chores at domestic sites, and during transition times between activities or classes).

5. Monitor the social interactions during "conversational opportunities" to identify any breakdowns in transfer of conversation initiation or turntaking skills. If breakdowns occur, skills can be practiced during "maintenance sessions" that are being provided on a regular basis (see Teaching Procedure, p. 28).

Invitation to Try It

We heartily invite you to try to teach some of your students to participate in conversations with their friends and family with the support of their conversation books and informed partners. It has been our experience that the students and their partners derive a great deal of pleasure from the type of social interaction that conversation provides.

Please let us know of your concerns, questions, and successes. We want to continue to refine the training procedures to increase their effectiveness in promoting quality conversational interactions. We may be reached at the following address or phone number:

Conversation and Social Competence Research Project
San Francisco State University
612 Font Boulevard
San Francisco, CA 94132
(Phone: (415) 338-7848).

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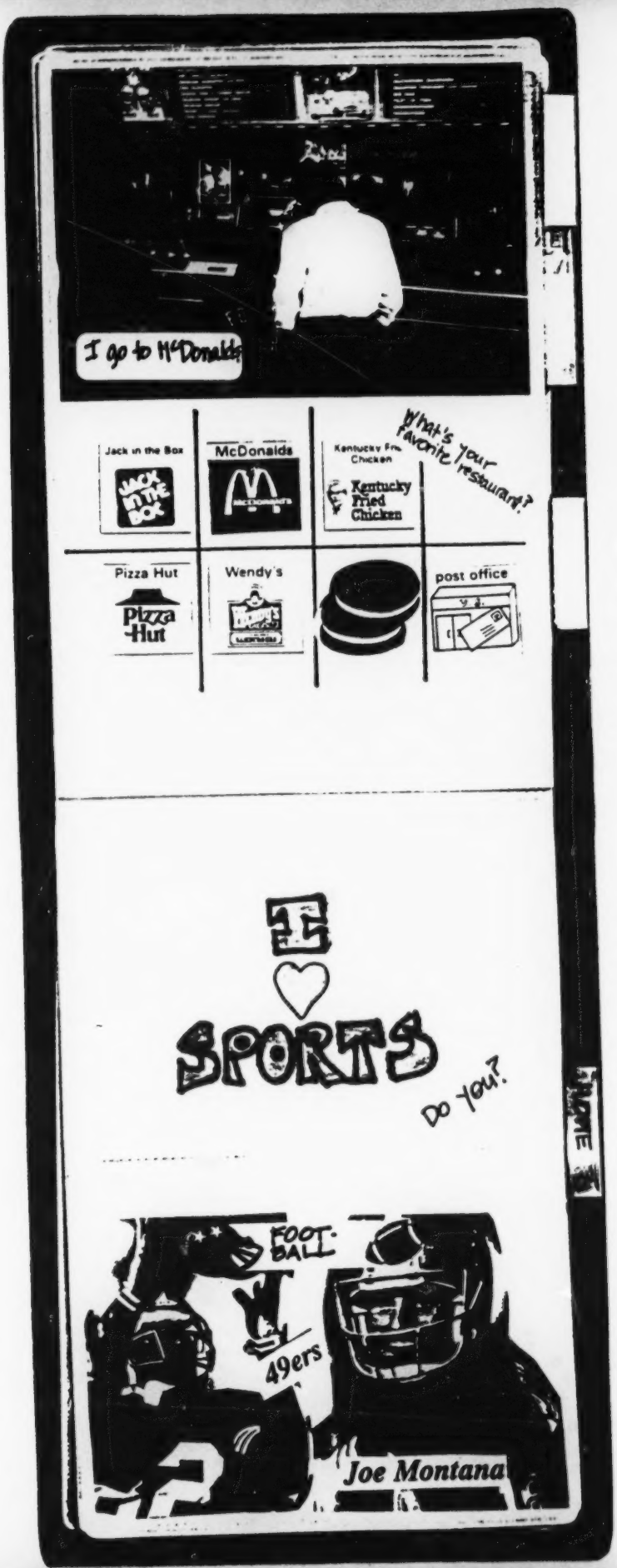
Appendix A
Pages from Conversation Books

My photography class.
The boys in my class.
Edward + me.
I like mice. Do you?
FOOD
SPORTS

Easter egg hunt.
Making a kite.
Amanda, Payal, Jeff, & me!
Flying my kite.
Have you ever flown one?
FOOD
A.T.
STACKS


I go to McDonalds
Jack in the Box
McDonalds
Kentucky Fried Chicken
What's your favorite restaurant?
Pizza Hut
Wendy's
post office
I ♡ SPORTS
Do you?
FOOT BALL
49ers
Joe Montana

BASEBALL
that's me
What's your favorite sport?
GOLF
SOCCER
TENNIS
BOWLING
BUSTER DOUGLAS
HEAVYWEIGHT CHAMPION
Mike Tyson
boxing

These are my birds.
My Dad & me.
This is my Mom.
I ride my bike to school sometimes.

Appendix B
Partner Training Script

Partner Training Script

"We are going to be teaching some of our students to have conversations with their friends. They will be using a book with pictures and words in it because sometimes it's hard to figure out what they are trying to say."

"Your part is to sit with (Joe) for five minutes or so and take part in the conversation. You may begin by asking him a question."

"(Joe) will take a turn by answering your question and making a new comment (or asking a question). (Joe) will answer your question by pointing to a picture and maybe saying some words; (he) will ask you a question or make a comment by pointing to a different picture and maybe saying something."

"If you do not understand what (he) is trying to tell you, you can ask (him) to repeat it. If you still do not understand, try to guess from the picture that (he) points to."

"After (Joe) answers your question wait until he has a chance to point to a new picture. Then it is your turn to talk about that picture.

"You can talk about anything else you want to during your turn, but be sure to end it by asking (Joe) a question."

"So, you always do three things: talk about what (Joe) just pointed to (and anything else you want to) and then ask him a new question, and then be sure to wait until (Joe) has a chance to talk about other things as well."

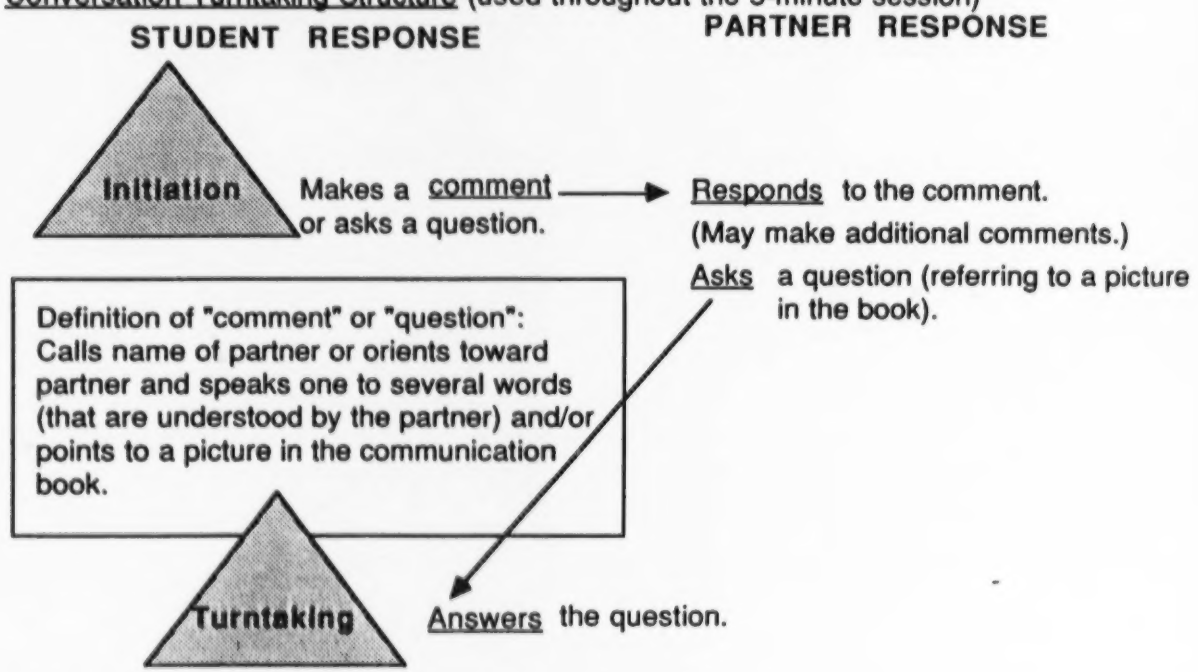
Appendix C
Instructional Program and Data Sheet

Conversation Training

Instructional Objective

The student will initiate a conversation and will use a communication book adaptation and a specific "turntaking structure" that will allow for a sustained exchange of messages with a communication partner during a (five-minute) instructional session occurring in a variety of classroom, nonclassroom, and community settings.

Conversation Turntaking Structure (used throughout the 5-minute session)


STUDENT RESPONSE
PARTNER RESPONSE
Initiation
Makes a comment or asks a question.
Responds to the comment.
(May make additional comments.)
Asks a question (referring to a picture in the book).
Definition of "comment" or "question":
Calls name of partner or orients toward partner and speaks one to several words (that are understood by the partner) and/or points to a picture in the communication book.
Turntaking
Answers the question.

Definition of "answer":

Speaks one to several words and/or points to picture in communication book--where the content of the response is relevant to the question asked. (A speech-alone response must be understood by the partner.)

Makes a new comment. → Responds to the comment.
(May make additional comments.)

Asks a question (referring to a picture in the book).

Instructional Procedure

If the student does not initiate a conversation or take a complete "conversation turn," use a prompt-fade procedure to teach initiation and turntaking.

Prompt procedure for book use

Use the following sequence of prompts to teach the student to remove the book from the pouch to initiate conversation, to turn pages, and to point to pictures to make comments and answer questions.

[Example only--prompt sequences are always individualized.]

1. full physical and direct verbal
2. gesture and direct verbal
3. direct verbal
4. indirect verbal

Move through the prompt sequence as the student performs successfully at each level of assistance.

Prompt procedure for word/phrase accompaniment:

Initially, provide direct verbal models of appropriate words and phrases to accompany pointing to pictures to make comments or answer questions (e.g., "Say: I'm going out for lunch.").

Direct verbal prompts are faded to indirect verbal prompts (e.g., "What could you say about that?") as the student nears independence pointing to pictures utilizing the "conversation structure."

Reinforcement:

If the student performs successfully at the current prompt level to initiate a conversation or take a conversation turn, provide positive feedback.

Correction:

If the student does not respond correctly, give increasing levels of assistance until the student is successful.

Measurement Procedures

If the student initiates a conversation during the 5-minute session, circle the **I** (initiation) on the data sheet. When it is the student's turn, mark **A** (answer) on the data sheet if she answers the partner's question; mark **C** (comment) if she then makes a new comment or asks a question. If both **A** and **C** are marked [A/C], the student has taken 1 turn.

Instructor Guidelines

- The instructor should be positioned to one side of the partner dyad next to the student receiving training so that the student and her partner focus on one another rather than on the instructor.
- Assistance should be provided as discretely as possible (verbal prompts may be whispered).
- Reinforcement for correct responses should not interrupt the flow of the conversation and should be intermittent as the natural reinforcement inherent in conversational turntaking increases in strength.

I = initiation
A = answer
C = new comment

Conversation Data Sheet

Instructor: _____ **Initiated:** yes no
Student: _____ **# turns:** _____
Partner: _____
Date: _____
Prompt level: _____

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Instructor: _____ **Initiated:** yes no
Student: _____ **# turns:** _____
Partner: _____
Date: _____
Prompt level: _____

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Instructor: _____ **Initiated:** yes no
Student: _____ **# turns:** _____
Partner: _____
Date: _____
Prompt level: _____

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

Example: Marking the Data Sheet

I = initiation	**Conversation Data Sheet**
A = answer	
C = new comment	

Instructor:_____ **Initiated:** yes no

Student: _____ **# turns:**_____

Partner:_____

Date:_____

Prompt level: _____

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

During this 5-minute training session the instructor was providing gesture prompts for use of the book (i.e., page turning and pointing) and direct verbal prompts for words or phrases that accompany selection of a picture. With this level of assistance from the instructor, Mark took 12 complete conversational turns. On "turn 10," he required additional assistance to make a new comment and only a "partial turn" was recorded.